

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Group Art Unit:	1796	)
		)
Examiner:	Mullis	)
		)
Inventor:	Wang, et al.	)
		)
Serial No.:	10/791,049	)
		)
Filed:	March 2, 2004	)
		)
For:	Method of Making Nano-Particles	)
	of Selected Size Distribution	)

**ANSWER**

This Answer Brief is filed in response to the Examiner's Answer of March 16, 2010.

Any fees due should be charged to Deposit Account No. 060925, reference P03002US1A.

**I. Status of Claims**

Claims 10-17, 23-25, 27-31, 34-37 are pending and are finally rejected. The rejections of each of these claims are now appealed. Claims 1-9, 18-22, 32, and 33 are withdrawn. Claim 26 is cancelled.

## **II. Grounds of Rejection to be Reviewed on Appeal**

Whether claims 10-17, 23-25, 27-31, and 34-37 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Krom et al. (U.S. 6,437,050).

### **III. Argument**

#### **A. Regarding the Meaning of “Mono-Block Polymer Chain”**

The Examiner’s Response states that the specification does not indicate that its discussion of “mono-block” on page 6 is meant to be a definition of that term. In rebuttal, there is no requirement that disclosure in the specification be specifically labeled as a definition for that disclosure to be relevant to the meaning of a claim term. Claims must be interpreted in light of the specification and the fact that an uncommon term, such as mono-block, is used indicates that the specification should be turned to for guidance.

Furthermore, the term “separate” in the specification indicates that the mono-block polymer chains is different from and separate from the concurrently formed di-block polymer chains, not that it is separate from the entire nanoparticle. Furthermore, the claims use “mono-block” in conjunction with “diblock,” as a way to distinguish between the two types of polymer chains in the surface layer of the nanoparticle.

Despite the Examiner’s several arguments regarding the meaning of the term “mono-block,” Applicants believe that the plain language of the claims and the disclosure in the specification clearly supports Applicant’s construction of the claim term mono-block polymer chain, and does not allow for the overly-broad and confusing interpretation favored by the Examiner. It is not relevant that the claims *could* have said something different, as the Examiner’s Answer appears to suggest. A broadest reasonable interpretation of the claims in light of the specification by one of ordinary skill in the art (not an Examiner motivated by a desire to maintain a final rejection) would clearly be patentable over Applicant’s own earlier issued Krom reference.

#### **B. Regarding the Citation to Examples 2 and 3 of Krom**

This is the first time that the Examiner has pointed to these sections of Krom. Thus, it is a new basis for the rejection and should be designated as such, thereby giving Applicants the opportunity to reopen prosecution.

Regarding Example 2, this Example does not produce a nanoparticle with the mono-block and di-block polymer chains as required by the claims. The Example discloses that an additional amount of polybutadiene was added to the nanoparticles having SBR-BR polymer chains. No polymerization was observed to occur. After making this observation, a subsequent addition of initiator was made. Example 2 discloses that this produced a gel. This indicates that the particle formation failed and did not produce any well-defined species. It likely caused cross-linking between the previously discrete nanoparticles, which, in turn, created very high molecular weight species that turned into a gel. Thus, the Examiner has no basis for alleging that Example 2 produced the nanoparticle structure required by the claims.

The process disclosed in Example 2 is different from both the process disclosed in the present application and the process referred to in the previously filed Declaration (wherein a simultaneous addition of monomer and initiator was disclosed as a route to adding a monoblock polymer chain to a nanoparticle).

It is unclear why Example 3 of Krom is referred to in some portions of the Answer, since it does not include the second charge of initiator that the Examiner refers to.

**C. Rebuttal to the Three Reasons Set Forth that Krom Discloses Mono-Block Polymer Chain in the Nanoparticle Even if Examples 2 and 3 are Absent**

First, the Examiner states that Applicants Declaration ignores Example 2 of Krom. This reason, however, requires Example 2 to be present in Krom. Thus, this reason is entirely dependent on the Examiner's allegations regarding Example 2 being correct, and as explained

above, they are not. Furthermore, Applicants' were not aware that the Examiner considered this portion of Krom relevant to the claims at the time the Declaration was submitted.

The second proffered reason, that "mono-block" does not mean what the specification says it means simply goes back to the Examiner's first argument discussed above. As explained above, this argument is incorrect.

The third reason is that Krom discloses a rubber composition that includes polybutadiene and that this somehow anticipates the claims. However, this is incorrect. The claims are directed to a nanoparticle that includes mono-block and diblock polymer chains. The disclosure of a rubber composition including a separate polybutadiene polymer that would clearly not be part of the nanoparticle itself is irrelevant to what is required by the claims.

**D. Rebuttal to the Examiner's Allegation that the Polydispersity Range of the Claims is met by Krom**

Applicants' previously explained why, in this case, the difference between "less than 1.3" polydispersity (disclosed in Krom) and "about 1.5" is significant due to the fact that the base value of this measurement is 1. The Examiner's Answer did not address this, nor did it address the fact that Krom does not teach the claimed range with sufficient specificity, nor did it address the teaching away from a high polydispersity in Krom. A polydispersity of "about 1.5" would be considered a high polydispersity by one of ordinary skill in the art. These are all more specific and relevant inquiries than the general arguments stated in the Answer. Thus, the balance of the evidence must weigh in favor of Applicants.

The disclosure on page 7 of the present specification cited by the Examiner is relevant to the present specification wherein mono-block polymers are present in the nanoparticle. In contrast, as explained above, this nanoparticle structure is not disclosed in Krom.

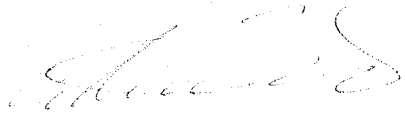
**E. Dependent Claim 12**

Regarding dependent claim 12, its limitations have still not been addressed by the Examiner.

Respectfully submitted,

May 14, 2010  
Date: \_\_\_\_\_

By: \_\_\_\_\_

  
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